



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

Date: 12/19/07

Subject: **1,2,4 Triazole.** Revised Chronic and Acute Aggregate Dietary Exposure Assessments to Include for New Uses of Myclobutanil on Snap Bean, Mint, Papaya, Gooseberry, Currant, Caneberry, Bell and Non-Bell Pepper, Head and Leaf Lettuce, and Artichoke. PC Code: 600074. DP Num: 347252. Decision#: 372360.

Reviewer: W. Cutchin, Acting Branch Senior Scientist
Alternative Risk Integration Assessment Team (ARIA)
Risk Integration, Minor Use & Emergency Response Branch (RIMUERB)
Registration Division (RD; 7505P)

Through: M. Doherty, Ph.D., Senior Chemist
Registration Action Branch 2 (RAB2)
Health Effects Division (HED; 7505P)

And

G. Kramer, Ph.D., Senior Chemist
Registration Action Branch 1 (RAB1)
HED (7509P)

To: W. Cutchin, Acting Branch Senior Scientist
ARIA/RD (7505P)

Executive Summary

HED previously conducted separate acute and chronic aggregate (food + water) dietary risk assessments for 1,2,4-triazole (1,2,4-T), a common metabolite of all triazole-based fungicides. It was recommended that these assessments be updated each time new uses are proposed for any triazole-based fungicide (DP Num: 322215, M. Doherty, 2/7/07). The present document reports the results of an update for the uses of myclobutanil [α -butyl- α -(4-chlorophenyl)-1*H*-1,2,4-triazole-1-propanenitrile] on Crop Group 8, except tomato; okra; Crop Subgroup 4A, except

spinach; cilantro; artichoke; papaya; black sapote; canistel; mamey sapote; mango; sapodilla; and star apple. In addition, data have been submitted in support of the requests to remove the conditions of registration for myclobutanol on bean, snap, succulent; peppermint and spearmint; gooseberry; current; and caneberry. The last update to 1,2,4-T was conducted to support a request for uses of difenoconazole, [1-[2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole] in/on fruiting vegetables, pome fruit, sugar beets, tuberous and corm vegetables, and imported papaya (DP Num: 341803, M. Sahafeyan, 10/30/07).

The Dietary Exposure Evaluation Model - Food Consumption Intake Database (DEEM-FCID™, ver. 2.03) model was used for conducting aggregate acute and chronic dietary risk assessments for 1,2,4-T; all assumptions and criteria used in the previous aggregate dietary risk assessments were also maintained in this dietary assessment.

The results, after including all the new myclobutanol uses show only a very minimal increase from the previous acute and chronic dietary risk estimates for 1,2,4-T and do not exceed the Agency's level of concern. The acute and chronic aggregate (food + water) dietary risks for the U.S. general population and all population subgroups are below the HED level of concern; the highest acute exposure estimate occupies 31% of Population-Adjusted Dose (aPAD) for the all-infants population sub-group at the 95 percentile of exposure distribution. The highest chronic exposure estimate occupies 43% of Population-Adjusted Dose (cPAD) for children 1-2 years old.

Introduction and Background

HED has conducted an aggregate dietary (food + water) risk assessment for 1,2,4-T (DP Num: 322238, M. Doherty, 11/1/05) resulting from exposure to 19 registered or pending triazole-based fungicides with food uses, including myclobutanol. That risk assessment is now updated to include the new proposed uses of myclobutanol on Crop Group 8, except tomato; okra; Crop Subgroup 4A, except spinach; cilantro; artichoke; papaya; black sapote; canistel; mamey sapote; mango; sapodilla; and star apple.

Methodology

(M. Doherty, DP Num: 322238, 11/1/05)

Exposure to 1,2,4-T may occur through direct or indirect means. For purposes of this assessment, direct exposure is defined as exposure to residues of 1,2,4-T, *per se*. Indirect exposure to 1,2,4-T may occur when there is exposure to a triazole-derivative fungicide. Indirect exposure is defined as exposure to 1,2,4-T that occurs from exposure to a triazole fungicide and subsequent metabolic conversion of the parent compound to 1,2,4-T within the human system. For assessing direct and indirect dietary exposure, residue levels of 1,2,4-T were estimated from parent triazole-derivative fungicide tolerances. For each food/parent fungicide tolerance combination, a residue estimate was calculated by multiplying the tolerance by a metabolic conversion factor and by a molecular weight conversion factor. Direct-exposure residue levels used the metabolic factors from plant metabolism studies for crop commodities and from

livestock metabolism studies for livestock commodities. Indirect-exposure residue levels used metabolic factors from rat metabolism studies. For some compounds metabolic conversion factors were not readily available and the maximum factors from the entire class of compounds were used (20% for plants, 77% for livestock).

Through a joint effort by the U.S. Triazole Task Force (USTTF) and USDA's Pesticide Data Program (PDP), monitoring data depicting residues of 1,2,4-T are available for apples, peaches, wheat flour, bananas, eggs, peanut butter, soybeans, finished water, strawberry, milk, grapes, and tomato. Most of the monitoring data for 1,2,4-T were reported as being below the level of quantification.

The following rules were used to select residues for the dietary exposure analysis:

1. If no monitoring data were available for the crop, or from a representative commodity, the calculated residue value was used.
2. If the monitoring dataset contains values that are greater than the LOQ, the monitoring data were used.
3. If the monitoring data are all less than the reported LOQ and the calculated residue value is less than $\frac{1}{2}$ LOQ, the calculated residue values were used.
4. If the monitoring data are less than the reported LOQ and the calculated residue value is greater than the LOQ, a value of $\frac{1}{2}$ LOQ was used.
5. Average residue estimates from the indirect exposure pathway were added to either the maximum direct residue estimate for acute assessments or the average direct residue estimate for chronic assessments.

For the indirect-exposure part of the analysis, average indirect-residue estimates were used for both the acute and chronic assessments. The average value was selected due to the fact that this indirect exposure is addressed, at least in part, by the toxicology studies and risk assessment for the various triazole-derivative parent fungicides. A summary of the values used in the assessments and their sources is shown in Table 1. The residues were also calculated for myclobutanil new uses that were covered in the previous risk assessment under different triazole-based pesticide(s); however, if the calculated residue value was higher than that in the last risk assessment, the new residue value was used (shown as bold in the Table 1), otherwise, it was not modified. The new myclobutanil tolerances for parent and its alcohol metabolite α - (3-hydroxybutyl)- α - (4-chlorophenyl)-1*H*-1, 2,4-triazole-1-propanenitrile (free and bound) are:

Commodity	Tolerance (ppm)
Fruiting vegetables (except cucurbits), Crop Group 8, except tomato	4.0
Okra	4.0
Leafy greens, Crop Subgroup 4A, except spinach	9.0

Cilantro	9.0
Artichoke	0.90
Papaya	3.0
Black sapote	3.0
Canistel	3.0
Mamey sapote	3.0
Mango	3.0
Sapodilla	3.0
Star apple	3.0

In addition, triazole residues in pecan of 0.31 ppm were included in this assessment from the most recent tetracronaozole risk assessment (DP Num: 321751, M. Rust, 1/26/07).

Residues of 1,2,4-T in water did not change as a result of new uses. This is because the new myclobutanil uses do not bring about higher residues in water than those calculated in the last assessment. Likewise, input values for residues of 1,2,4-T in livestock commodities are the same as in the last assessment since feed items associated with the new uses did not result in higher residues in livestock commodities than those calculated in the last assessment.

Table 1. Summary of Direct and Indirect Residue Estimates Used to Assess Dietary Exposure to 1,2,4-Triazole.

Item	Dietary Model Input, ppm ¹		Direct Exposure ²								Average Indirect Residue Estimate, ppm ⁶	
			Selected Residue Estimate, ppm ³				Calculated Data, ppm ⁴		Monitoring Data, ppm ⁵			
	Acute	Chronic	Acute	Acute Source	Chronic	Chronic Source	Max.	Avg.	LOQ	Max.	Avg.	
Pome Fruit (Apple)	0.0280	0.0280	0.0100	1/2 LOQ	0.0100	1/2 LOQ	0.0470	0.0247	0.02000	0.02000	0.02000	0.0180
Artichoke	0.0753	0.0655	0.0478	Max. Calc'd	0.0380	Avg. Calc'd	0.0478	0.0380	---	---	---	0.0275
Asparagus	0.0099	0.0056	0.0071	Max. Calc'd	0.0028	Avg. Calc'd	0.0071	0.0028	---	---	---	0.0028
Banana	0.0238	0.0238	0.0050	1/2 LOQ	0.0050	1/2 LOQ	0.1913	0.0279	0.01000	0.00315	0.00036	0.0188
Dry Bean	0.0230	0.0137	0.0202	Max. Calc'd	0.0109	Avg. Calc'd	0.0202	0.0109	---	---	---	0.0028
Succulent Bean	0.0568	0.0291	0.0478	Max. Calc'd	0.0201	Avg. Calc'd	0.0478	0.0201	---	---	---	0.0090
Blueberry	0.0462	0.0321	0.0404	Max. Calc'd	0.0263	Avg. Calc'd	0.0404	0.0263	---	---	---	0.0058
Caneberry	0.1495	0.1305	0.0957	Max. Calc'd	0.0767	Avg. Calc'd	0.0957	0.0767	---	---	---	0.0538
Canola	0.0100	0.0082	0.0040	Max. Calc'd	0.0022	Avg. Calc'd	0.0040	0.0022	---	---	---	0.0060
Carrot	0.0101	0.0101	0.0081	Max. Calc'd	0.0081	Avg. Calc'd	0.0081	0.0081	---	---	---	0.0020
Leafy Petioles (Group 4B)	0.2274	0.1272	0.2018	Max. Calc'd	0.1016	Avg. Calc'd	0.2018	0.1016	---	---	---	0.0256
Barley	0.0054	0.0040	0.0040	Max. Calc'd	0.0026	Avg. Calc'd	0.0040	0.0026	---	---	---	0.0014
Oats	0.0055	0.0042	0.0040	Max. Calc'd	0.0027	Avg. Calc'd	0.0040	0.0027	---	---	---	0.0015
Rice	0.3013	0.0932	0.2826	Max. Calc'd	0.0745	Avg. Calc'd	0.2826	0.0745	---	---	---	0.0187
Rye	0.0054	0.0040	0.0040	Max. Calc'd	0.0026	Avg. Calc'd	0.0040	0.0025	---	---	---	0.0012
Wheat	0.0052	0.0037	0.0040	Max. Calc'd	0.0025	Avg. Calc'd	0.0040	0.0025	---	---	---	0.0012
Wheat Flour	0.0052	0.0037	0.0040	Max. Calc'd	0.0025	Avg. Calc'd	0.0040	0.0025	0.01000	0.01000	0.01000	0.0013
Wild Rice	0.0231	0.0137	0.0202	Max. Calc'd	0.0108	Avg. Calc'd	0.0202	0.0108	---	---	---	0.0029
Citrus (Group 10)	0.0436	0.0436	0.0410	Max. Calc'd	0.0410	Avg. Calc'd	0.0410	0.0410	---	---	---	0.0026
Coffee	0.0411	0.0005	0.0410	Max. Calc'd	0.0004	Avg. Calc'd	0.0410	0.0004	---	---	---	0.0001
Fruiting Vegetables (Group 8), except Tomato	0.2463	0.1609	0.1913	Max. Calc'd	0.1059	Avg. Calc'd	0.1913	0.1059	---	---	---	0.0550
Field Corn	0.0051	0.0032	0.0040	Max. Calc'd	0.0021	Avg. Calc'd	0.0040	0.0021	---	---	---	0.0011
Sweet Corn	0.0050	0.0031	0.0040	Max. Calc'd	0.0021	Avg. Calc'd	0.0040	0.0021	---	---	---	0.0010
Cotton	0.0965	0.0300	0.0898	Max. Calc'd	0.0233	Avg. Calc'd	0.0898	0.0233	---	---	---	0.0067

Table 1. Summary of Direct and Indirect Residue Estimates Used to Assess Dietary Exposure to 1,2,4-Triazole.

Item	Dietary Model Input, ppm ¹		Direct Exposure ²								Average Indirect Residue Estimate, ppm ⁶	
			Selected Residue Estimate, ppm ³				Calculated Data, ppm ⁴		Monitoring Data, ppm ⁵			
	Acute	Chronic	Acute	Acute Source	Chronic	Chronic Source	Max.	Avg.	LOQ	Max.	Avg.	
Cranberry	0.0460	0.0266	0.0404	Max. Calc'd	0.0210	Avg. Calc'd	0.0404	0.0210	---	---	---	0.0056
Cucurbits	0.0126	0.0100	0.0096	Max. Calc'd	0.0070	Avg. Calc'd	0.0096	0.0070	---	---	---	0.0030
Curant	0.1844	0.1328	0.1435	Max. Calc'd	0.0919	Avg. Calc'd	0.1435	0.0919	---	---	---	0.0409
Elderberry	0.0505	0.0505	0.0404	Max. Calc'd	0.0404	Avg. Calc'd	0.0404	0.0404	---	---	---	0.0101
Grape	0.0500	0.0337	0.0213	Max. Mon.	0.0050	Avg. Mon.	0.2244	0.0727	0.01000	0.02130	0.00150	0.0287
Raisin	0.6123	0.3492	0.4784	Max. Calc'd	0.2153	Avg. Calc'd	0.4784	0.2153	---	---	---	0.1339
Hops	1.6476	1.2136	1.3463	Max. Calc'd	0.9123	Avg. Calc'd	1.3463	0.9123	---	---	---	0.3013
Lychee	0.0855	0.0855	0.0673	Max. Calc'd	0.0673	Avg. Calc'd	0.0673	0.0673	---	---	---	0.0182
Mango	0.1806	0.1133	0.1435	Max. Calc'd	0.0762	Avg. Calc'd	0.1435	0.0762	---	---	---	0.0371
Mayhaw	0.0419	0.0419	0.0335	Max. Calc'd	0.0335	Avg. Calc'd	0.0335	0.0335	---	---	---	0.0084
Bulb Vegetables	0.0142	0.0104	0.0121	Max. Calc'd	0.0083	Avg. Calc'd	0.0121	0.0083	---	---	---	0.0021
Green Onion	0.3350	0.3350	0.3229	Max. Calc'd	0.3229	Avg. Calc'd	0.3229	0.3229	---	---	---	0.0121
Okra	0.2452	0.1720	0.1913	Max. Calc'd	0.1181	Avg. Calc'd	0.1913	0.1181	---	---	---	0.0539
Papaya	0.1829	0.1136	0.1435	Max. Calc'd	0.0769	Avg. Calc'd	0.1435	0.0769	---	---	---	0.0394
Peanut	0.0097	0.0053	0.0081	Max. Calc'd	0.0037	Avg. Calc'd	0.0081	0.0037	---	---	---	0.0016
Peanut Butter	0.0779	0.0266	0.0763	Max. Mon.	0.0250	Avg. Mon.	0.0081	0.0037	0.01000	0.07630	0.02500	0.0016
Peppermint	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Pineapple	0.2192	0.1507	0.1411	Max. Calc'd	0.0726	Avg. Calc'd	0.1411	0.0726	---	---	---	0.0781
Sorghum	0.0094	0.0056	0.0081	Max. Calc'd	0.0043	Avg. Calc'd	0.0081	0.0043	---	---	---	0.0013
Soybean	0.0136	0.0136	0.0050	1/2 LOQ	0.0050	1/2 LOQ	0.0807	0.0248	0.01000	0.00290	0.00060	0.0086
Spearmint	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Stone Fruit, (Group 12) except Cherry	0.1158	0.0858	0.0957	Max. Calc'd	0.0657	Avg. Calc'd	0.0957	0.0657	0.21000	0.21000	0.21000	0.0201
Cherry	0.2863	0.1824	0.2392	Max. Calc'd	0.1353	Avg. Calc'd	0.2392	0.1353	---	---	---	0.0471
Strawberry	0.0315	0.0315	0.0180	1/2 LOQ	0.0180	1/2 LOQ	0.0605	0.0422	0.03600	0.03600	0.03600	0.0135
Sugar Beet	0.0160	0.0109	0.0121	Max. Calc'd	0.0070	Avg. Calc'd	0.0121	0.0070	---	---	---	0.0039
Sugar Beet Molasses	0.1350	0.0517	0.1211	Max. Calc'd	0.0700	Avg. Calc'd	0.1210	0.0700	---	---	---	0.0139
Sunflower	0.0028	0.0028	0.0022	Max. Calc'd	0.0022	Avg. Calc'd	0.0022	0.0022	---	---	---	0.0006

Table 1. Summary of Direct and Indirect Residue Estimates Used to Assess Dietary Exposure to 1,2,4-Triazole.

Item	Dietary Model Input, ppm ¹		Direct Exposure ²								Average Indirect Residue Estimate, ppm ⁶	
			Selected Residue Estimate, ppm ³				Calculated Data, ppm ⁴		Monitoring Data, ppm ⁵			
	Acute	Chronic	Acute	Acute Source	Chronic	Chronic Source	Max.	Avg.	LOQ	Max.	Avg.	
Tomato	0.0157	0.0157	0.0050	1/2 LOQ	0.0050	1/2 LOQ	0.0204	0.0174	0.01000	0.01000	0.01000	0.0107
Tuberous and Corm, Vegetables (Group 1C)	0.0019	0.0014	0.0014	Max. Calc'd	0.0009	Avg. Calc'd	0.0014	0.0009	---	---	---	0.0005
Turnip	0.0228	0.0228	0.0180	Max. Calc'd	0.0180	Avg. Calc'd	0.0180	0.0180	---	---	---	0.0048
Turnip Greens	0.3638	0.3638	0.3590	Max. Calc'd	0.3590	Avg. Calc'd	0.3590	0.3590	---	---	---	0.0048
Tree Nuts	0.0048	0.0039	0.0040	Max. Calc'd	0.0031	Avg. Calc'd	0.0040	0.0031	---	---	---	0.0008
Almond	0.0186	0.0120	0.0164	Max. Calc'd	0.0098	Avg. Calc'd	0.0164	0.0098	---	---	---	0.0022
Pecan	0.0268	0.0218	0.0115	Max. Calc'd	0.0065	Avg. Calc'd	0.0115	0.0065	---	---	---	0.0153
Pistachio	0.0048	0.0039	0.0040	Max. Calc'd	0.0031	Avg. Calc'd	0.0040	0.0031	---	---	---	0.0008
Poultry Meat	0.0073	0.0051	0.0045	Max. Calc'd	0.0023	Avg. Calc'd	0.0045	0.0023	---	---	---	0.0028
Poultry Fat	0.0064	0.0038	0.0045	Max. Calc'd	0.0019	Avg. Calc'd	0.0045	0.0019	---	---	---	0.0019
Poultry Meat Byprod.	0.0063	0.0036	0.0045	Max. Calc'd	0.0018	Avg. Calc'd	0.0045	0.0018	---	---	---	0.0018
Poultry Liver	0.0073	0.0056	0.0045	Max. Calc'd	0.0028	Avg. Calc'd	0.0045	0.0028	---	---	---	0.0028
Egg	0.0073	0.0056	0.0045	Max. Calc'd	0.0028	Avg. Calc'd	0.0045	0.0028	0.01000	0.00370	0.00050	0.0028
Cattle Meat	0.0644	0.0254	0.0517	Max. Calc'd	0.0127	Avg. Calc'd	0.0517	0.0127	---	---	---	0.0127
Cattle Fat	0.0644	0.0323	0.0517	Max. Calc'd	0.0196	Avg. Calc'd	0.0517	0.0196	---	---	---	0.0127
Cattle Meat Byprod.	0.0644	0.0253	0.0517	Max. Calc'd	0.0126	Avg. Calc'd	0.0517	0.0126	---	---	---	0.0127
Cattle Liver	0.6834	0.2236	0.5716	Max. Calc'd	0.1118	Avg. Calc'd	0.5716	0.1118	---	---	---	0.1118
Cattle Kidney	0.0675	0.0316	0.0517	Max. Calc'd	0.0158	Avg. Calc'd	0.0517	0.0158	---	---	---	0.0158
Milk	0.0080	0.0052	0.0053	Max. Mon.	0.0025	Avg. Mon.	0.0071	0.0027	0.00500	0.00530	0.00140	0.0027
Leafy Veg, (Group 4A) except Spinach	0.6458	0.6458	0.4305	Max. Calc'd	0.4305	Avg. Calc'd	0.4305	0.4305	---	---	---	0.2153
Cilantro	0.6458	0.6458	0.4305	Max. Calc'd	0.4305	Avg. Calc'd	0.4305	0.4305	---	---	---	0.2153
Black Sapote	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Canistel	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Mamey Sapote	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Sapodilla	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718

Table 1. Summary of Direct and Indirect Residue Estimates Used to Assess Dietary Exposure to 1,2,4-Triazole.

Item	Dietary Model Input, ppm ¹		Direct Exposure ²								Average Indirect Residue Estimate, ppm ⁶	
			Selected Residue Estimate, ppm ³			Calculated Data, ppm ⁴		Monitoring Data, ppm ⁵				
	Acute	Chronic	Acute	Acute Source	Chronic	Chronic Source	Max.	Avg.	LOQ	Max.	Avg.	
Star Apple	0.2153	0.2153	0.1435	Max. Calc'd	0.1435	Avg. Calc'd	0.1435	0.1435	---	---	---	0.0718
Gooseberry	0.1435	0.1435	0.0957	Max. Calc'd	0.0957	Avg. Calc'd	0.0957	0.0957	---	---	---	0.0478
Prune	0.4387	0.1935	0.3827	Max. Calc'd	0.1375	Avg. Calc'd	0.3827	0.1375	---	---	---	0.0560
Soybean Oil	0.0902	0.0361	0.0807	Max. Calc'd	0.0266	Avg. Calc'd	0.0807	0.0266	---	---	---	0.0095
Tomato, Paste	0.0669	0.0532	0.0478	Max. Calc'd	0.0341	Avg. Calc'd	0.0478	0.0341	---	---	---	0.0191
Tomato, Puree	0.0370	0.0353	0.0239	Max. Calc'd	0.0222	Avg. Calc'd	0.0239	0.0222	---	---	---	0.0131
Brassica Veg, (Group 5)	0.0021	0.0021	0.0014	Max. Calc'd	0.0014	Avg. Calc'd	0.0014	0.0014	---	---	---	0.0007
Leaf of Root and Tuber (Group 2)	0.0021	0.0021	0.0014	Max. Calc'd	0.0014	Avg. Calc'd	0.0014	0.0014	---	---	---	0.0007
Pea, Dry and Succulent	0.0021	0.0021	0.0014	Max. Calc'd	0.0014	Avg. Calc'd	0.0014	0.0014	---	---	---	0.0007
Root Veg. (Group 1A and 1B) except Carrot + Sugar Beet	0.0021	0.0021	0.0014	Max. Calc'd	0.0014	Avg. Calc'd	0.0014	0.0014	---	---	---	0.0007

¹ Values used in the dietary exposure assessment are a sum of the selected acute or chronic residue estimate and the average indirect residue estimate.² Values used to estimate direct ingestion of residues of 1,2,4-triazole. Values were selected from calculated data or monitoring data as indicated.³ Residue estimates and sources selected from calculated data or monitoring data using the criteria discussed in Section 6.1.1.1.⁴ Maximum or average residue estimates based on parent triazole-derivative fungicide tolerances after compensating for metabolic and molecular weight factors.⁵ Residue data for 1,2,4-triazole from USDA Pesticide Data Program or U.S. Triazole Task Force monitoring data.⁶ Average indirect residue estimates based on parent triazole-derivative fungicide tolerances after compensating for rat metabolic and molecular weight factors.

Toxicological Information

1,2,4-Triazole is a common metabolite of many triazole-derivative fungicides. As a metabolite, there are no data requirements, *per se*, for this compound. Nevertheless, a significant amount of toxicological data is available and has been reviewed by HED. The following summary table (Table 3) shows the doses selected for assessing dietary exposure and their associated endpoints. Data are insufficient at this time to assign a cancer classification to 1,2,4-triazole. Available data indicate that cancers associated with 1,2,4-triazole are likely to be a threshold effect and that a Q₁* approach is not appropriate. An RfD-approach for assessing cancer has been recommended. As such, the chronic exposure assessment is considered to be protective of any potential cancer-related effects.

Table 2. Summary of Toxicological Doses and Endpoints for 1,2,4-Triazole for Use in Dietary Risk Assessments.			
Exposure Scenario	Dose Used in Risk Assessment, UF	Special FQPA SF* and Level of Concern for Risk Assessment	Study and Toxicological Effects
Acute Dietary (females 13-49)	NOAEL = 30 mg/kg UF=1000 Acute RfD = 0.03 mg/kg	FQPA SF = 1 aPAD = <u>acute RfD</u> FQPA SF = 0.03 mg/kg/day	Developmental Toxicity study in rabbits LOAEL=45 mg/kg based on urinary tract malformations in fetuses
Acute Dietary (general population)	NOAEL = 30 mg/kg UF=1000 Acute RfD = 0.03 mg/kg	FQPA SF = 1 aPAD = <u>acute RfD</u> FQPA SF = 0.03 mg/kg/day	Developmental Toxicity study in rabbits LOAEL=45 mg/kg based on clinical signs and mortality in does starting on Gestation Day 6 or 7
Chronic Dietary (all populations)	LOAEL = 15 mg/kg/day UF =3000 Chronic RfD = 0.005 mg/kg/day	FQPA SF =1 cPAD = <u>chronic RfD</u> FQPA SF =0.005 mg/kg/day	Reproductive Toxicity study in rats LOAEL = 15 based on decreased body weight in adult males and on decreased body weight and brain weight in offspring
Cancer	Insufficient data for a cancer classification. Based on the available information, HED believes that an RfD approach is appropriate and that the cPAD is sufficient to assess cancer risk.		

Results

Acute and chronic dietary risk assessments were conducted using the Dietary Exposure Evaluation Model (DEEM-FCID, Version 2.03), which uses food consumption data from the USDA's Continuing Surveys of Food Intakes by Individuals (CSFII) from 1994-1996 and 1998. A separate cancer dietary assessment was not conducted. Although there is some concern regarding the carcinogenicity of 1,2,4-T, HED believes that the chronic dietary exposure assessment is sufficiently protective of any cancer-related effects.

The results (Table 3 below) show only a very minimal increase in the acute and chronic dietary risk assessment after including all the new use sites. The acute and chronic aggregate (food + water) dietary risks for the U.S. general population and all population subgroups changed only minimally from the last assessment and are still below the HED level of concern; the highest acute exposure is from all-infants population subgroup and occupies 32% of aPAD at the 95th percentile of the exposure distribution while the highest chronic exposure is from children 1-2 years old and occupies 41% of cPAD.

Table 3. Dietary (Food + Water) Direct and Indirect Exposure and Risk Estimates for 1,2,4-Triazole.							
Population Subgroup	aPAD, mg/kg/ day	Exposure Estimate, mg/kg/day			Risk Estimate, %aPAD ^a		
		95 th percentile	99 th percentile	99.9 th percentile	95 th percentile	99 th percentile	99.9 th percentile
Acute							
U.S. Population (total)	0.03	0.0039	0.0063	0.0112	13	21	38
All infants (< 1 year)	0.03	0.0093	0.0130	0.0213	31	43	71
Children 1-2 yrs	0.03	0.0077	0.0112	0.0161	26	38	54
Children 3-5 yrs	0.03	0.0062	0.0087	0.0139	21	29	46
Children 6-12 yrs	0.03	0.0042	0.0059	0.0091	14	20	30
Youth 13-19 yrs	0.03	0.0030	0.0048	0.0084	10	16	28
Adults 20-49 yrs	0.03	0.0033	0.0048	0.0075	11	16	25
Adults 50+ yrs	0.03	0.0029	0.0042	0.0065	10	14	22
Females 13-49 yrs	0.03	0.0033	0.0047	0.0082	11	16	27
Chronic							
Population Subgroup	cPAD, mg/kg/day	Exposure Estimate, mg/kg/day			Risk Estimate, % cPAD ^a		
U.S. Population (total)	0.005	0.00089			18		
All infants (< 1 year)	0.005	0.00162			32		
Children 1-2 yrs	0.005	0.00217			43		
Children 3-5 yrs	0.005	0.00173			35		
Children 6-12 yrs	0.005	0.00109			22		
Youth 13-19 yrs	0.005	0.00073			15		
Adults 20-49 yrs	0.005	0.00076			15		
Adults 50+ yrs	0.005	0.00073			15		
Females 13-49 yrs	0.005	0.00075			15		

The values for the population with the highest risk for each type of risk assessment are bolded.

^a Reported to 2 significant figures.

Conclusion

The acute and chronic aggregate (food + water) dietary risk assessment for 1,2,4-T was updated to include a Section 3 requests for new uses of myclobutanil on Crop Group 8, except tomato; okra; Crop Subgroup 4A, except spinach; cilantro; artichoke; papaya; black sapote; canistel; mamey sapote; mango; sapodilla; and star apple. The results, compared to the last risk assessment show only a very minimal increase in the acute and chronic dietary risk estimates for 1,2,4-T, after including all the new use sites, and are still below the HED level of concern. The highest acute exposure (from all-infants population subgroup) occupies 31% of the aPAD at the 95th percentile of the exposure distribution, and the highest chronic exposure (from children 1-2 years old) occupies 43% of cPAD; the acute and chronic aggregate dietary risks for 1,2,4-T are not of concern.

Attachments

- Attachment 1: DEEM-FCID™ Acute Exposure Estimates
- Attachment 2: DEEM-FCID™ Chronic Exposure Estimates
- Attachment 3: DEEM-FCID™ Acute Residue File
- Attachment 4: DEEM-FCID™ Chronic Residue File

Attachment 1: Acute Results

U.S. Environmental Protection Agency Ver. 2.02
DEEM-FCID ACUTE Analysis for 1,2,4-TRIAZOLE (1994-98 data)
Residue file: triazole-Acute Dir and Indir Food and Water-cutchin.R98
Adjustment factor #2 NOT used.
Analysis Date: 12-10-2007/12:05:36 Residue file dated: 12-10-2007/11:18:03/8
Daily totals for food and foodform consumption used.
Run Comment: "RfDs are PADs. aPAD for Females 13-49, Infants, and children =
0.03 mg/kg/day"
=====

Summary calculations (per capita):

	95th Percentile Exposure	% aRfD	99th Percentile Exposure	% aRfD	99.9th Percentile Exposure	% aRfD
U.S. Population:	0.003924	13.08	0.006312	21.04	0.011249	37.50
All infants:	0.009300	31.00	0.012979	43.26	0.021292	70.97
Children 1-2 yrs:	0.007672	25.57	0.011210	37.37	0.016099	53.66
Children 3-5 yrs:	0.006171	20.57	0.008740	29.13	0.013933	46.44
Children 6-12 yrs:	0.004153	13.84	0.005920	19.73	0.009059	30.20
Youth 13-19 yrs:	0.002987	9.96	0.004818	16.06	0.008431	28.10
Adults 20-49 yrs:	0.003254	10.85	0.004759	15.86	0.007480	24.93
Adults 50+ yrs:	0.002934	9.78	0.004219	14.06	0.006525	21.75
Females 13-49 yrs:	0.003277	10.92	0.004707	15.69	0.008152	27.17

Attachment 2: Chronic Results

U.S. Environmental Protection Agency
DEEM-FCID Chronic analysis for 1,2,4-TRIAZOLE
Residue file name: E:\working\Myclobut\triazole-Chronic Dir and Indir Food and Water-cutchin.R98

Ver. 2.00
(1994-98 data)

Analysis Date 12-10-2007/11:22:13 Residue file dated: 12-10-2007/09:46:37/8
Reference dose (RfD, Chronic) = .005 mg/kg bw/day
COMMENT 1: RfDs are PADS. aPAD for Females 13-49, Infants, and children = 0.03 mg/kg/day
=====
Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.000885	17.7%
U.S. Population (spring season)	0.000895	17.9%
U.S. Population (summer season)	0.000901	18.0%
U.S. Population (autumn season)	0.000865	17.3%
U.S. Population (winter season)	0.000881	17.6%
Northeast region	0.000920	18.4%
Midwest region	0.000885	17.7%
Southern region	0.000805	16.1%
Western region	0.000981	19.6%
Hispanics	0.001017	20.3%
Non-hispanic whites	0.000861	17.2%
Non-hispanic blacks	0.000829	16.6%
Non-hisp/non-white/non-black	0.001121	22.4%
All infants (< 1 year)	0.001616	32.3%
Nursing infants	0.000724	14.5%
Non-nursing infants	0.001955	39.1%
Children 1-6 yrs	0.001820	36.4%
Children 7-12 yrs	0.001031	20.6%
Females 13-19 (not preg or nursing)	0.000696	13.9%
Females 20+ (not preg or nursing)	0.000751	15.0%
Females 13-50 yrs	0.000794	15.9%
Females 13+ (preg/not nursing)	0.000874	17.5%
Females 13+ (nursing)	0.000975	19.5%
Males 13-19 yrs	0.000753	15.1%
Males 20+ yrs	0.000743	14.9%
Seniors 55+	0.000723	14.5%
Children 1-2 yrs	0.002168	43.4%
Children 3-5 yrs	0.001726	34.5%
Children 6-12 yrs	0.001088	21.8%
Youth 13-19 yrs	0.000728	14.6%
Adults 20-49 yrs	0.000762	15.2%
Adults 50+ yrs	0.000726	14.5%
Females 13-49 yrs	0.000752	15.0%

Attachment 3: Acute Input File

U.S. Environmental Protection Agency
DEEM-FCID Acute analysis for 1,2,4-TRIAZOLE
Residue file name: E:\working\Myclobut\triazole-Acute Dir and Indir Food and Water-
cutchin.R98
Analysis Date 12-10-2007 Residue file dated: 12-10-2007/11:18:03/8
Reference dose (aRfD) = 0.03 mg/kg bw/day
Comment: RfDs are PADs. aPAD for Females 13-49, Infants, and children = 0.03 mg/kg/day

EPA Code	Crop Grp	Food Name	Def Res (ppm)	Adj.Factors #1	Adj.Factors #2	Comment
14000030	14	Almond	0.018600	1.000	1.000	
14000031	14	Almond-babyfood	0.018600	1.000	1.000	
14000040	14	Almond, oil	0.018600	1.000	1.000	
14000041	14	Almond, oil-babyfood	0.018600	1.000	1.000	
04010050	4A	Amaranth, leafy	0.645800	1.000	1.000	
11000070	11	Apple, fruit with peel	0.028000	1.000	1.000	
11000080	11	Apple, peeled fruit	0.028000	1.000	1.000	
11000081	11	Apple, peeled fruit-babyfood	0.028000	1.000	1.000	
11000090	11	Apple, dried	0.028000	8.000	1.000	
11000091	11	Apple, dried-babyfood	0.028000	8.000	1.000	
11000100	11	Apple, juice	0.028000	1.300	1.000	
11000101	11	Apple, juice-babyfood	0.028000	1.300	1.000	
11000110	11	Apple, sauce	0.028000	1.000	1.000	
11000111	11	Apple, sauce-babyfood	0.028000	1.000	1.000	
120000120	12	Apricot	0.115800	1.000	1.000	
120000121	12	Apricot-babyfood	0.115800	1.000	1.000	
120000130	12	Apricot, dried	0.115800	6.000	1.000	
120000140	12	Apricot, juice	0.115800	1.000	1.000	
120000141	12	Apricot, juice-babyfood	0.115800	1.000	1.000	
01030150	1CD	Arrowroot, flour	0.001900	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.001900	1.000	1.000	
950000160	O	Artichoke, globe	0.075300	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.001900	1.000	1.000	
04010180	4A	Arugula	0.645800	1.000	1.000	
95000190	O	Asparagus	0.009900	1.000	1.000	
09020210	9B	Balsam pear	0.012600	1.000	1.000	
950000230	O	Banana	0.023800	1.000	1.000	
95000231	O	Banana-babyfood	0.023800	1.000	1.000	
95000240	O	Banana, dried	0.023800	3.900	1.000	
95000241	O	Banana, dried-babyfood	0.023800	3.900	1.000	
15000250	15	Barley, pearl barley	0.005400	1.000	1.000	
15000251	15	Barley, pearl barley-babyfood	0.005400	1.000	1.000	
15000260	15	Barley, flour	0.005400	1.000	1.000	
15000261	15	Barley, flour-babyfood	0.005400	1.000	1.000	
15000270	15	Barley, bran	0.005400	1.000	1.000	
06030300	6C	Bean, black, seed	0.023000	1.000	1.000	
06020310	6B	Bean, broad, succulent	0.056800	1.000	1.000	
06030320	6C	Bean, broad, seed	0.023000	1.000	1.000	
06020330	6B	Bean, cowpea, succulent	0.056800	1.000	1.000	
06030340	6C	Bean, cowpea, seed	0.023000	1.000	1.000	
06030350	6C	Bean, great northern, seed	0.023000	1.000	1.000	
06030360	6C	Bean, kidney, seed	0.023000	1.000	1.000	
06020370	6B	Bean, lima, succulent	0.056800	1.000	1.000	
06030380	6C	Bean, lima, seed	0.023000	1.000	1.000	
06030390	6C	Bean, mung, seed	0.023000	1.000	1.000	
06030400	6C	Bean, navy, seed	0.023000	1.000	1.000	
06030410	6C	Bean, pink, seed	0.023000	1.000	1.000	
06030420	6C	Bean, pinto, seed	0.023000	1.000	1.000	
06010430	6A	Bean, snap, succulent	0.056800	1.000	1.000	
06010431	6A	Bean, snap, succulent-babyfood	0.056800	1.000	1.000	
21000440	M	Beef, meat	0.064400	1.000	1.000	
21000441	M	Beef, meat-babyfood	0.064400	1.000	1.000	
21000450	M	Beef, meat, dried	0.064400	1.920	1.000	
21000460	M	Beef, meat byproducts	0.064400	1.000	1.000	
21000461	M	Beef, meat byproducts-babyfood	0.064400	1.000	1.000	
21000470	M	Beef, fat	0.064400	1.000	1.000	
21000471	M	Beef, fat-babyfood	0.064400	1.000	1.000	
21000480	M	Beef, kidney	0.067500	1.000	1.000	
21000490	M	Beef, liver	0.683400	1.000	1.000	
21000491	M	Beef, liver-babyfood	0.683400	1.000	1.000	
01010500	1AB	Beet, garden, roots	0.002100	1.000	1.000	
01010501	1AB	Beet, garden, roots-babyfood	0.002100	1.000	1.000	
02000510	2	Beet, garden, tops	0.002100	1.000	1.000	

01010520	1A	Beet, sugar	0.016000	1.000	1.000
01010521	1A	Beet, sugar-babyfood	0.016000	1.000	1.000
01010530	1A	Beet, sugar, molasses	0.135000	1.000	1.000
01010531	1A	Beet, sugar, molasses-babyfood	0.135000	1.000	1.000
13010550	13A	Blackberry	0.149500	1.000	1.000
13010560	13A	Blackberry, juice	0.149500	1.000	1.000
13010561	13A	Blackberry, juice-babyfood	0.149500	1.000	1.000
13020570	13B	Blueberry	0.046200	1.000	1.000
13020571	13B	Blueberry-babyfood	0.046200	1.000	1.000
13010580	13A	Boysenberry	0.149500	1.000	1.000
14000590	14	Brazil nut	0.004800	1.000	1.000
05010610	5A	Broccoli	0.002100	1.000	1.000
05010611	5A	Broccoli-babyfood	0.002100	1.000	1.000
05010620	5A	Broccoli, Chinese	0.002100	1.000	1.000
05020630	5B	Broccoli raab	0.002100	1.000	1.000
05010640	5A	Brussels sprouts	0.002100	1.000	1.000
15000650	15	Buckwheat	0.045600	1.000	1.000
15000660	15	Buckwheat, flour	0.045600	1.000	1.000
01010670	1AB	Burdock	0.002100	1.000	1.000
14000680	14	Butternut	0.004800	1.000	1.000
05010690	5A	Cabbage	0.002100	1.000	1.000
05020700	5B	Cabbage, Chinese, bok choy	0.002100	1.000	1.000
05010710	5A	Cabbage, Chinese, napa	0.002100	1.000	1.000
05010720	5A	Cabbage, Chinese, mustard	0.002100	1.000	1.000
95000740	O	Canistel	0.215300	1.000	1.000
09010750	9A	Cantaloupe	0.012600	1.000	1.000
04020760	4B	Cardoon	0.227400	1.000	1.000
01010780	1AB	Carrot	0.010100	1.000	1.000
01010781	1AB	Carrot-babyfood	0.010100	1.000	1.000
01010790	1AB	Carrot, juice	0.010100	1.000	1.000
09010800	9A	Casaba	0.012600	1.000	1.000
14000810	14	Cashew	0.004800	1.000	1.000
01030820	1CD	Cassava	0.001900	1.000	1.000
01030821	1CD	Cassava-babyfood	0.001900	1.000	1.000
05010830	5A	Cauliflower	0.002100	1.000	1.000
01010840	1AB	Celeriac	0.002100	1.000	1.000
04020850	4B	Celery	0.227400	1.000	1.000
04020851	4B	Celery-babyfood	0.227400	1.000	1.000
04020860	4B	Celery, juice	0.227400	1.000	1.000
04020870	4B	Celtuce	0.227400	1.000	1.000
09020880	9B	Chayote, fruit	0.012600	1.000	1.000
12000900	12	Cherry	0.286300	1.000	1.000
12000901	12	Cherry-babyfood	0.286300	1.000	1.000
12000910	12	Cherry, juice	0.286300	1.500	1.000
12000911	12	Cherry, juice-babyfood	0.286300	1.500	1.000
14000920	14	Chestnut	0.004800	1.000	1.000
40000930	P	Chicken, meat	0.007300	1.000	1.000
40000931	P	Chicken, meat-babyfood	0.007300	1.000	1.000
40000940	P	Chicken, liver	0.007300	1.000	1.000
40000950	P	Chicken, meat byproducts	0.006300	1.000	1.000
40000951	P	Chicken, meat byproducts-babyfoo	0.006300	1.000	1.000
40000960	P	Chicken, fat	0.006400	1.000	1.000
40000961	P	Chicken, fat-babyfood	0.006400	1.000	1.000
40000970	P	Chicken, skin	0.006400	1.000	1.000
40000971	P	Chicken, skin-babyfood	0.006400	1.000	1.000
06030980	6C	Chickpea, seed	0.023000	1.000	1.000
06030981	6C	Chickpea, seed-babyfood	0.023000	1.000	1.000
06030990	6C	Chickpea, flour	0.023000	1.000	1.000
01011000	1AB	Chicory, roots	0.002100	1.000	1.000
02001010	2	Chicory, tops	0.002100	1.000	1.000
09021020	9B	Chinese waxgourd	0.012600	1.000	1.000
04011040	4A	Chrysanthemum, garland	0.645800	1.000	1.000
10001060	10	Citrus citron	0.043600	1.000	1.000
10001070	10	Citrus hybrids	0.043600	1.000	1.000
10001080	10	Citrus, oil	0.043600	1.000	1.000
95001150	O	Coffee, roasted bean	0.041100	1.000	1.000
95001160	O	Coffee, instant	0.041100	1.000	1.000
05021170	5B	Collards	0.002100	1.000	1.000
19011180	19A	Coriander, leaves	0.645800	1.000	1.000
19011181	19A	Coriander, leaves-babyfood	0.645800	1.000	1.000
15001200	15	Corn, field, flour	0.005100	1.000	1.000
15001201	15	Corn, field, flour-babyfood	0.005100	1.000	1.000
15001210	15	Corn, field, meal	0.005100	1.000	1.000
15001211	15	Corn, field, meal-babyfood	0.005100	1.000	1.000
15001220	15	Corn, field, bran	0.005100	1.000	1.000
15001230	15	Corn, field, starch	0.005100	1.000	1.000
15001231	15	Corn, field, starch-babyfood	0.005100	1.000	1.000
15001240	15	Corn, field, syrup	0.005100	1.500	1.000
15001241	15	Corn, field, syrup-babyfood	0.005100	1.500	1.000
15001250	15	Corn, field, oil	0.005100	1.000	1.000

15001251	15	Corn, field, oil-babyfood	0.005100	1.000	1.000
15001260	15	Corn, pop	0.005000	1.000	1.000
15001270	15	Corn, sweet	0.005000	1.000	1.000
15001271	15	Corn, sweet-babyfood	0.005000	1.000	1.000
95001280	O	Cottonseed, oil	0.096500	1.000	1.000
95001281	O	Cottonseed, oil-babyfood	0.096500	1.000	1.000
11001290	11	Crabapple	0.028000	1.000	1.000
95001300	O	Cranberry	0.046000	1.000	1.000
95001301	O	Cranberry-babyfood	0.046000	1.000	1.000
95001310	O	Cranberry, dried	0.046000	4.000	1.000
95001320	O	Cranberry, juice	0.046000	1.100	1.000
95001321	O	Cranberry, juice-babyfood	0.046000	1.100	1.000
04011330	4A	Cress, garden	0.645800	1.000	1.000
04011340	4A	Cress, upland	0.645800	1.000	1.000
09021350	9B	Cucumber	0.012600	1.000	1.000
13021360	13B	Currant	0.184400	1.000	1.000
13021370	13B	Currant, dried	0.184400	1.000	1.000
04011380	4A	Dandelion, leaves	0.645800	1.000	1.000
01031390	1CD	Dasheen, corm	0.001900	1.000	1.000
02001400	2	Dasheen, leaves	0.002100	1.000	1.000
13011420	13A	Dewberry	0.149500	1.000	1.000
70001450	P	Egg, whole	0.007300	1.000	1.000
70001451	P	Egg, whole-babyfood	0.007300	1.000	1.000
70001460	P	Egg, white	0.007300	1.000	1.000
70001461	P	Egg, white (solids)-babyfood	0.007300	1.000	1.000
70001470	P	Egg, yolk	0.007300	1.000	1.000
70001471	P	Egg, yolk-babyfood	0.007300	1.000	1.000
080001480	8	Eggplant	0.246300	1.000	1.000
13021490	13B	Elderberry	0.050500	1.000	1.000
04011500	4A	Endive	0.645800	1.000	1.000
04021520	4B	Fennel, Florence	0.227400	1.000	1.000
14001550	14	Filbert	0.004800	1.000	1.000
14001560	14	Filbert, oil	0.004800	1.000	1.000
03001640	3	Garlic	0.014200	1.000	1.000
03001650	3	Garlic, dried	0.014200	1.000	1.000
03001651	3	Garlic, dried-babyfood	0.014200	1.000	1.000
01031660	1CD	Ginger	0.001900	1.000	1.000
01031661	1CD	Ginger-babyfood	0.001900	1.000	1.000
01031670	1CD	Ginger, dried	0.001900	1.000	1.000
01011680	1AB	Ginseng, dried	0.002100	1.000	1.000
23001690	M	Goat, meat	0.064400	1.000	1.000
23001700	M	Goat, meat byproducts	0.064400	1.000	1.000
23001710	M	Goat, fat	0.064400	1.000	1.000
23001720	M	Goat, kidney	0.067500	1.000	1.000
23001730	M	Goat, liver	0.683400	1.000	1.000
13021740	13B	Gooseberry	0.143500	1.000	1.000
95001750	O	Grape	0.050000	1.000	1.000
95001760	O	Grape, juice	0.050000	1.200	1.000
95001761	O	Grape, juice-babyfood	0.050000	1.200	1.000
95001770	O	Grape, leaves	0.050000	1.000	1.000
95001780	O	Grape, raisin	0.612300	1.000	1.000
95001790	O	Grape, wine and sherry	0.050000	1.200	1.000
10001800	10	Grapefruit	0.043600	1.000	1.000
10001810	10	Grapefruit, juice	0.043600	2.100	1.000
06031820	6C	Guar, seed	0.023000	1.000	1.000
06031821	6C	Guar, seed-babyfood	0.023000	1.000	1.000
14001850	14	Hickory nut	0.004800	1.000	1.000
09011870	9A	Honeydew melon	0.012600	1.000	1.000
95001880	O	Hop	1.647600	1.000	1.000
24001890	M	Horse, meat	0.064400	1.000	1.000
01011900	1AB	Horseradish	0.002100	1.000	1.000
13021910	13B	Huckleberry	0.046200	1.000	1.000
05021940	5B	Kale	0.002100	1.000	1.000
05011960	5A	Kohlrabi	0.002100	1.000	1.000
10001970	10	Kumquat	0.043600	1.000	1.000
03001980	3	Leek	0.014200	1.000	1.000
10001990	10	Lemon	0.043600	1.000	1.000
10002000	10	Lemon, juice	0.043600	2.000	1.000
10002001	10	Lemon, juice-babyfood	0.043600	2.000	1.000
10002010	10	Lemon, peel	0.043600	1.000	1.000
06032030	6C	Lentil, seed	0.023000	1.000	1.000
04012040	4A	Lettuce, head	0.645800	1.000	1.000
04012050	4A	Lettuce, leaf	0.645800	1.000	1.000
10002060	10	Lime	0.043600	1.000	1.000
10002070	10	Lime, juice	0.043600	2.000	1.000
10002071	10	Lime, juice-babyfood	0.043600	2.000	1.000
13012080	13A	Loganberry	0.149500	1.000	1.000
11002100	11	Loquat	0.028000	1.000	1.000
95002110	O	Lychee	0.085500	1.000	1.000
95002120	O	Lychee, dried	0.085500	1.850	1.000

14002130 14	Macadamia nut	0.004800	1.000	1.000
95002150 O	Mango	0.018060	1.000	1.000
95002151 O	Mango-babyfood	0.018060	1.000	1.000
95002160 O	Mango, dried	0.018060	1.000	1.000
95002170 O	Mango, juice	0.018060	1.000	1.000
95002171 O	Mango, juice-babyfood	0.018060	1.000	1.000
28002210 M	Meat, game	0.064400	1.000	1.000
27002220 D	Milk, fat	0.008000	1.000	1.000
27002221 D	Milk, fat - baby food/infant for	0.008000	1.000	1.000
27012230 D	Milk, nonfat solids	0.008000	1.000	1.000
27012231 D	Milk, nonfat solids-baby food/in	0.008000	1.000	1.000
27022240 D	Milk, water	0.008000	1.000	1.000
27022241 D	Milk, water-babyfood/infant form	0.008000	1.000	1.000
27032251 D	Milk, sugar (lactose)-baby food/	0.008000	1.000	1.000
15002260 15	Millet, grain	0.005200	1.000	1.000
05022290 5B	Mustard greens	0.002100	1.000	1.000
12002300 12	Nectarine	0.115800	1.000	1.000
15002310 15	Oat, bran	0.005500	1.000	1.000
15002320 15	Oat, flour	0.005500	1.000	1.000
15002321 15	Oat, flour-babyfood	0.005500	1.000	1.000
15002330 15	Oat, groats/rolled oats	0.005500	1.000	1.000
15002331 15	Oat, groats/rolled oats-babyfood	0.005500	1.000	1.000
08002340 8	Okra	0.245200	1.000	1.000
03002370 3	Onion, dry bulb	0.014200	1.000	1.000
03002371 3	Onion, dry bulb-babyfood	0.014200	1.000	1.000
03002380 3	Onion, dry bulb, dried	0.014200	9.000	1.000
03002381 3	Onion, dry bulb, dried-babyfood	0.014200	9.000	1.000
03002390 3	Onion, green	0.335000	1.000	1.000
10002400 10	Orange	0.043600	1.000	1.000
10002410 10	Orange, juice	0.043600	1.800	1.000
10002411 10	Orange, juice-babyfood	0.043600	1.800	1.000
10002420 10	Orange, peel	0.043600	1.000	1.000
95002450 O	Papaya	0.182900	1.000	1.000
95002451 O	Papaya-babyfood	0.182900	1.000	1.000
95002460 O	Papaya, dried	0.182900	1.000	1.000
95002470 O	Papaya, juice	0.182900	1.000	1.000
04012480 4A	Parsley, leaves	0.645800	1.000	1.000
01012500 1AB	Parsley, turnip rooted	0.002100	1.000	1.000
01012510 1AB	Parsnip	0.002100	1.000	1.000
01012511 1AB	Parsnip-babyfood	0.002100	1.000	1.000
06022550 6B	Pea, succulent	0.002100	1.000	1.000
06022551 6B	Pea, succulent-babyfood	0.002100	1.000	1.000
06032560 6C	Pea, dry	0.002100	1.000	1.000
06032561 6C	Pea, dry-babyfood	0.002100	1.000	1.000
06012570 6A	Pea, edible podded, succulent	0.002100	1.000	1.000
06032580 6C	Pea, pigeon, seed	0.002100	1.000	1.000
06022590 6B	Pea, pigeon, succulent	0.002100	1.000	1.000
12002600 12	Peach	0.115800	1.000	1.000
12002601 12	Peach-babyfood	0.115800	1.000	1.000
12002610 12	Peach, dried	0.115800	7.000	1.000
12002611 12	Peach, dried-babyfood	0.115800	7.000	1.000
12002620 12	Peach, juice	0.115800	1.000	1.000
12002621 12	Peach, juice-babyfood	0.115800	1.000	1.000
95002630 O	Peanut	0.009700	1.000	1.000
95002640 O	Peanut, butter	0.077900	1.000	1.000
95002650 O	Peanut, oil	0.077900	1.000	1.000
11002660 11	Pear	0.028000	1.000	1.000
11002661 11	Pear-babyfood	0.028000	1.000	1.000
11002670 11	Pear, dried	0.028000	6.250	1.000
11002680 11	Pear, juice	0.028000	1.000	1.000
11002681 11	Pear, juice-babyfood	0.028000	1.000	1.000
14002690 14	Pecan	0.026800	1.000	1.000
08002700 8	Pepper, bell	0.246300	1.000	1.000
08002701 8	Pepper, bell-babyfood	0.246300	1.000	1.000
08002710 8	Pepper, bell, dried	0.246300	1.000	1.000
08002711 8	Pepper, bell, dried-babyfood	0.246300	1.000	1.000
08002720 8	Pepper, nonbell	0.246300	1.000	1.000
08002721 8	Pepper, nonbell-babyfood	0.246300	1.000	1.000
08002730 8	Pepper, nonbell, dried	0.246300	1.000	1.000
95002750 O	Peppermint	0.215300	1.000	1.000
95002760 O	Peppermint, oil	0.215300	1.000	1.000
95002790 O	Pineapple	0.219200	1.000	1.000
95002791 O	Pineapple-babyfood	0.219200	1.000	1.000
95002800 O	Pineapple, dried	0.219200	5.000	1.000
95002810 O	Pineapple, juice	0.219200	1.700	1.000
95002811 O	Pineapple, juice-babyfood	0.219200	1.700	1.000
14002820 14	Pistachio	0.004800	1.000	1.000
95002830 O	Plantain	0.023800	1.000	1.000
95002840 O	Plantain, dried	0.023800	3.900	1.000
12002850 12	Plum	0.115800	1.000	1.000

12002851	12	Plum-babyfood	0.115800	1.000	1.000
12002860	12	Plum, prune, fresh	0.438700	1.000	1.000
12002861	12	Plum, prune, fresh-babyfood	0.438700	1.000	1.000
12002870	12	Plum, prune, dried	0.438700	5.000	1.000
12002871	12	Plum, prune, dried-babyfood	0.438700	5.000	1.000
12002880	12	Plum, prune, juice	0.438700	1.400	1.000
12002881	12	Plum, prune, juice-babyfood	0.438700	1.400	1.000
25002900	M	Pork, meat	0.064400	1.000	1.000
25002901	M	Pork, meat-babyfood	0.064400	1.000	1.000
25002910	M	Pork, skin	0.064400	1.000	1.000
25002920	M	Pork, meat byproducts	0.064400	1.000	1.000
25002921	M	Pork, meat byproducts-babyfood	0.064400	1.000	1.000
25002930	M	Pork, fat	0.064400	1.000	1.000
25002931	M	Pork, fat-babyfood	0.064400	1.000	1.000
25002940	M	Pork, kidney	0.067500	1.000	1.000
25002950	M	Pork, liver	0.683400	1.000	1.000
01032960	1C	Potato, chips	0.001900	1.000	1.000
01032970	1C	Potato, dry (granules/ flakes)	0.001900	6.500	1.000
01032971	1C	Potato, dry (granules/ flakes) -b	0.001900	6.500	1.000
01032980	1C	Potato, flour	0.001900	1.000	1.000
01032981	1C	Potato, flour-babyfood	0.001900	1.000	1.000
01032990	1C	Potato, tuber, w/peel	0.001900	1.000	1.000
01032991	1C	Potato, tuber, w/peel-babyfood	0.001900	1.000	1.000
01033000	1C	Potato, tuber, w/o peel	0.001900	1.000	1.000
01033001	1C	Potato, tuber, w/o peel-babyfood	0.001900	1.000	1.000
60003010	P	Poultry, other, meat	0.007300	1.000	1.000
60003020	P	Poultry, other, liver	0.007300	1.000	1.000
60003030	P	Poultry, other, meat byproducts	0.006300	1.000	1.000
60003040	P	Poultry, other, fat	0.006400	1.000	1.000
60003050	P	Poultry, other, skin	0.006400	1.000	1.000
10003070	10	Pummelo	0.043600	1.000	1.000
09023080	9B	Pumpkin	0.012600	1.000	1.000
09023090	9B	Pumpkin, seed	0.012600	1.000	1.000
11003100	11	Quince	0.028000	1.000	1.000
29003120	M	Rabbit, meat	0.064400	1.000	1.000
04013130	4A	Radicchio	0.645800	1.000	1.000
01013140	1AB	Radish, roots	0.002100	1.000	1.000
02003150	2	Radish, tops	0.002100	1.000	1.000
01013160	1AB	Radish, Oriental, roots	0.002100	1.000	1.000
02003170	2	Radish, Oriental, tops	0.002100	1.000	1.000
05023180	5B	Rape greens	0.002100	1.000	1.000
20003190	20	Rapeseed, oil	0.010000	1.000	1.000
20003191	20	Rapeseed, oil-babyfood	0.010000	1.000	1.000
13013200	13A	Raspberry	0.149500	1.000	1.000
13013201	13A	Raspberry-babyfood	0.149500	1.000	1.000
13013210	13A	Raspberry, juice	0.149500	1.000	1.000
13013211	13A	Raspberry, juice-babyfood	0.149500	1.000	1.000
04023220	4B	Rhubarb	0.227400	1.000	1.000
15003230	15	Rice, white	0.031300	1.000	1.000
15003231	15	Rice, white-babyfood	0.031300	1.000	1.000
15003240	15	Rice, brown	0.031300	1.000	1.000
15003241	15	Rice, brown-babyfood	0.031300	1.000	1.000
15003250	15	Rice, flour	0.031300	1.000	1.000
15003251	15	Rice, flour-babyfood	0.031300	1.000	1.000
15003260	15	Rice, bran	0.031300	1.000	1.000
15003261	15	Rice, bran-babyfood	0.031300	1.000	1.000
01013270	1AB	Rutabaga	0.002100	1.000	1.000
15003280	15	Rye, grain	0.005400	1.000	1.000
15003290	15	Rye, flour	0.005400	1.000	1.000
01013310	1AB	Salsify, roots	0.002100	1.000	1.000
02003320	2	Salsify, tops	0.002100	1.000	1.000
95003330	O	Sapote, Mamey	0.215300	1.000	1.000
03003380	3	Shallot	0.014200	1.000	1.000
26003390	M	Sheep, meat	0.064400	1.000	1.000
26003391	M	Sheep, meat-babyfood	0.064400	1.000	1.000
26003400	M	Sheep, meat byproducts	0.064400	1.000	1.000
26003410	M	Sheep, fat	0.064400	1.000	1.000
26003411	M	Sheep, fat-babyfood	0.064400	1.000	1.000
26003420	M	Sheep, kidney	0.067500	1.000	1.000
26003430	M	Sheep, liver	0.683400	1.000	1.000
15003440	15	Sorghum, grain	0.009400	1.000	1.000
15003450	15	Sorghum, syrup	0.009400	1.000	1.000
06003470	6	Soybean, seed	0.013600	1.000	1.000
06003480	6	Soybean, flour	0.013600	1.000	1.000
06003481	6	Soybean, flour-babyfood	0.013600	1.000	1.000
06003490	6	Soybean, soy milk	0.013600	1.000	1.000
06003491	6	Soybean, soy milk-babyfood or in	0.013600	1.000	1.000
06003500	6	Soybean, oil	0.090200	1.000	1.000
06003501	6	Soybean, oil-babyfood	0.090200	1.000	1.000
95003520	O	Spearmint	0.215300	1.000	1.000

95003530 O	Spearmint, oil	0.215300	1.000	1.000
09023560 9B	Squash, summer	0.012600	1.000	1.000
09023561 9B	Squash, summer-babyfood	0.012600	1.000	1.000
09023570 9B	Squash, winter	0.012600	1.000	1.000
09023571 9B	Squash, winter-babyfood	0.012600	1.000	1.000
95003590 O	Strawberry	0.031500	1.000	1.000
95003591 O	Strawberry-babyfood	0.031500	1.000	1.000
95003600 O	Strawberry, juice	0.031500	1.000	1.000
95003601 O	Strawberry, juice-babyfood	0.031500	1.000	1.000
20003640 20	Sunflower, seed	0.002800	1.000	1.000
20003650 20	Sunflower, oil	0.002800	1.000	1.000
20003651 20	Sunflower, oil-babyfood	0.002800	1.000	1.000
01033660 1CD	Sweet potato	0.001900	1.000	1.000
01033661 1CD	Sweet potato-babyfood	0.001900	1.000	1.000
04023670 4B	Swiss chard	0.227400	1.000	1.000
10003690 10	Tangerine	0.043600	1.000	1.000
10003700 10	Tangerine, juice	0.043600	2.300	1.000
01033710 1CD	Tanier, corm	0.001900	1.000	1.000
08003740 8	Tomatillo	0.246300	1.000	1.000
08003750 8	Tomato	0.015700	1.000	1.000
08003751 8	Tomato-babyfood	0.015700	1.000	1.000
08003760 8	Tomato, paste	0.066900	5.400	1.000
08003761 8	Tomato, paste-babyfood	0.066900	5.400	1.000
08003770 8	Tomato, puree	0.037000	3.300	1.000
08003771 8	Tomato, puree-babyfood	0.037000	3.300	1.000
08003780 8	Tomato, dried	0.012200	14.300	1.000
08003781 8	Tomato, dried-babyfood	0.012200	14.300	1.000
08003790 8	Tomato, juice	0.012200	1.500	1.000
15003810 15	Triticale, flour	0.005200	1.000	1.000
15003811 15	Triticale, flour-babyfood	0.005200	1.000	1.000
50003820 P	Turkey, meat	0.007300	1.000	1.000
50003821 P	Turkey, meat-babyfood	0.007300	1.000	1.000
50003830 P	Turkey, liver	0.007300	1.000	1.000
50003831 P	Turkey, liver-babyfood	0.007300	1.000	1.000
50003840 P	Turkey, meat byproducts	0.006300	1.000	1.000
50003841 P	Turkey, meat byproducts-babyfood	0.006300	1.000	1.000
50003850 P	Turkey, fat	0.006400	1.000	1.000
50003851 P	Turkey, fat-babyfood	0.006400	1.000	1.000
50003860 P	Turkey, skin	0.006400	1.000	1.000
50003861 P	Turkey, skin-babyfood	0.006400	1.000	1.000
01033870 1CD	Turmeric	0.001900	1.000	1.000
01013880 1AB	Turnip, roots	0.022800	1.000	1.000
05023890 5B	Turnip, greens	0.363800	1.000	1.000
14003910 14	Walnut	0.004800	1.000	1.000
86010000 O	Water, direct, all sources	0.041000	1.000	1.000
86020000 O	Water, indirect, all sources	0.041000	1.000	1.000
09013990 9A	Watermelon	0.012600	1.000	1.000
09014000 9A	Watermelon, juice	0.012600	1.000	1.000
15004010 15	Wheat, grain	0.005200	1.000	1.000
15004011 15	Wheat, grain-babyfood	0.005200	1.000	1.000
15004020 15	Wheat, flour	0.005200	1.000	1.000
15004021 15	Wheat, flour-babyfood	0.005200	1.000	1.000
15004030 15	Wheat, germ	0.005200	1.000	1.000
15004040 15	Wheat, bran	0.005200	1.000	1.000
15004050 15	Wild rice	0.023100	1.000	1.000
01034060 1CD	Yam, true	0.001900	1.000	1.000
01034070 1CD	Yam bean	0.001900	1.000	1.000

Attachment 4: Chronic Input File

U.S. Environmental Protection Agency
DEEM-FCID Chronic analysis for 1,2,4-TRIAZOLE
Residue file: E:\working\Mycllobut\triazole-Chronic Dir and Indir Food and Water-cutchin.R98
Analysis Date 12-10-2007 Residue file dated: 12-10-2007/09:46:37/8
Reference dose (RfD) = 0.005 mg/kg bw/day
Comment: RfDs are PADs. aPAD for Females 13-49, Infants, and children = 0.03 mg/kg/day

Food Crop EPA Code	Crop Grp	Food Name	Residue (ppm)	Adj. Factors		Comment
				#1	#2	
14000030	14	Almond	0.012000	1.000	1.000	
14000031	14	Almond-babyfood	0.012000	1.000	1.000	
14000040	14	Almond, oil	0.012000	1.000	1.000	
14000041	14	Almond, oil-babyfood	0.012000	1.000	1.000	
04010050	4A	Amaranth, leafy	0.645800	1.000	1.000	
11000070	11	Apple, fruit with peel	0.028000	1.000	1.000	
11000080	11	Apple, peeled fruit	0.028000	1.000	1.000	
11000081	11	Apple, peeled fruit-babyfood	0.028000	1.000	1.000	
11000090	11	Apple, dried	0.028000	8.000	1.000	
11000091	11	Apple, dried-babyfood	0.028000	8.000	1.000	
11000100	11	Apple, juice	0.028000	1.300	1.000	
11000101	11	Apple, juice-babyfood	0.028000	1.300	1.000	
11000110	11	Apple, sauce	0.028000	1.000	1.000	
11000111	11	Apple, sauce-babyfood	0.028000	1.000	1.000	
12000120	12	Apricot	0.085800	1.000	1.000	
12000121	12	Apricot-babyfood	0.085800	1.000	1.000	
12000130	12	Apricot, dried	0.085800	6.000	1.000	
12000140	12	Apricot, juice	0.085800	1.000	1.000	
12000141	12	Apricot, juice-babyfood	0.085800	1.000	1.000	
01030150	1CD	Arrowroot, flour	0.001400	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.001400	1.000	1.000	
95000160	O	Artichoke, globe	0.065500	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.001400	1.000	1.000	
04010180	4A	Arugula	0.645800	1.000	1.000	
95000190	O	Asparagus	0.005600	1.000	1.000	
09020210	9B	Balsam pear	0.010000	1.000	1.000	
95000230	O	Banana	0.023800	1.000	1.000	
95000231	O	Banana-babyfood	0.023800	1.000	1.000	
95000240	O	Banana, dried	0.023800	3.900	1.000	
95000241	O	Banana, dried-babyfood	0.023800	3.900	1.000	
15000250	15	Barley, pearl barley	0.040000	1.000	1.000	
15000251	15	Barley, pearl barley-babyfood	0.040000	1.000	1.000	
15000260	15	Barley, flour	0.040000	1.000	1.000	
15000261	15	Barley, flour-babyfood	0.040000	1.000	1.000	
15000270	15	Barley, bran	0.040000	1.000	1.000	
06030300	6C	Bean, black, seed	0.013700	1.000	1.000	
06020310	6B	Bean, broad, succulent	0.029100	1.000	1.000	
06030320	6C	Bean, broad, seed	0.013700	1.000	1.000	
06020330	6B	Bean, cowpea, succulent	0.029100	1.000	1.000	
06030340	6C	Bean, cowpea, seed	0.013700	1.000	1.000	
06030350	6C	Bean, great northern, seed	0.013700	1.000	1.000	
06030360	6C	Bean, kidney, seed	0.013700	1.000	1.000	
06020370	6B	Bean, lima, succulent	0.029100	1.000	1.000	
06030380	6C	Bean, lima, seed	0.013700	1.000	1.000	
06030390	6C	Bean, mung, seed	0.013700	1.000	1.000	
06030400	6C	Bean, navy, seed	0.013700	1.000	1.000	
06030410	6C	Bean, pink, seed	0.013700	1.000	1.000	
06030420	6C	Bean, pinto, seed	0.013700	1.000	1.000	
06010430	6A	Bean, snap, succulent	0.029100	1.000	1.000	
06010431	6A	Bean, snap, succulent-babyfood	0.029100	1.000	1.000	
21000440	M	Beef, meat	0.025400	1.000	1.000	
21000441	M	Beef, meat-babyfood	0.025400	1.000	1.000	
21000450	M	Beef, meat, dried	0.025400	1.920	1.000	
21000460	M	Beef, meat byproducts	0.025300	1.000	1.000	
21000461	M	Beef, meat byproducts-babyfood	0.025300	1.000	1.000	
21000470	M	Beef, fat	0.032300	1.000	1.000	
21000471	M	Beef, fat-babyfood	0.032300	1.000	1.000	
21000480	M	Beef, kidney	0.031600	1.000	1.000	
21000490	M	Beef, liver	0.223600	1.000	1.000	
21000491	M	Beef, liver-babyfood	0.223600	1.000	1.000	
01010500	1AB	Beet, garden, roots	0.002100	1.000	1.000	

01010501	1AB	Beet, garden, roots-babyfood	0.002100	1.000	1.000
02000510	2	Beet, garden, tops	0.002100	1.000	1.000
01010520	1A	Beet, sugar	0.010900	1.000	1.000
01010521	1A	Beet, sugar-babyfood	0.010900	1.000	1.000
01010530	1A	Beet, sugar, molasses	0.051700	1.000	1.000
01010531	1A	Beet, sugar, molasses-babyfood	0.051700	1.000	1.000
13010550	13A	Blackberry	0.130500	1.000	1.000
13010560	13A	Blackberry, juice	0.130500	1.000	1.000
13010561	13A	Blackberry, juice-babyfood	0.130500	1.000	1.000
13020570	13B	Blueberry	0.032100	1.000	1.000
13020571	13B	Blueberry-babyfood	0.032100	1.000	1.000
13010580	13A	Boysenberry	0.130500	1.000	1.000
14000590	14	Brazil nut	0.003900	1.000	1.000
05010610	5A	Broccoli	0.002100	1.000	1.000
05010611	5A	Broccoli-babyfood	0.002100	1.000	1.000
05010620	5A	Broccoli, Chinese	0.002100	1.000	1.000
05020630	5B	Broccoli raab	0.002100	1.000	1.000
05010640	5A	Brussels sprouts	0.002100	1.000	1.000
15000650	15	Buckwheat	0.003700	1.000	1.000
15000660	15	Buckwheat, flour	0.003700	1.000	1.000
01010670	1AB	Burdock	0.002100	1.000	1.000
14000680	14	Butternut	0.003900	1.000	1.000
05010690	5A	Cabbage	0.002100	1.000	1.000
05020700	5B	Cabbage, Chinese, bok choy	0.002100	1.000	1.000
05010710	5A	Cabbage, Chinese, napa	0.002100	1.000	1.000
05010720	5A	Cabbage, Chinese, mustard	0.002100	1.000	1.000
95000740	O	Canistel	0.215300	1.000	1.000
09010750	9A	Cantaloupe	0.010000	1.000	1.000
04020760	4B	Cardoon	0.127200	1.000	1.000
01010780	1AB	Carrot	0.010100	1.000	1.000
01010781	1AB	Carrot-babyfood	0.010100	1.000	1.000
01010790	1AB	Carrot, juice	0.010100	1.000	1.000
09010800	9A	Casaba	0.010000	1.000	1.000
14000810	14	Cashew	0.003900	1.000	1.000
01030820	1CD	Cassava	0.001400	1.000	1.000
01030821	1CD	Cassava-babyfood	0.001400	1.000	1.000
05010830	5A	Cauliflower	0.002100	1.000	1.000
01010840	1AB	Celeriac	0.002100	1.000	1.000
04020850	4B	Celery	0.127200	1.000	1.000
04020851	4B	Celery-babyfood	0.127200	1.000	1.000
04020860	4B	Celery, juice	0.127200	1.000	1.000
04020870	4B	Celtuce	0.127200	1.000	1.000
09020880	9B	Chayote, fruit	0.010000	1.000	1.000
12000900	12	Cherry	0.182400	1.000	1.000
12000901	12	Cherry-babyfood	0.182400	1.000	1.000
12000910	12	Cherry, juice	0.182400	1.500	1.000
12000911	12	Cherry, juice-babyfood	0.182400	1.500	1.000
14000920	14	Chestnut	0.003900	1.000	1.000
40000930	P	Chicken, meat	0.005100	1.000	1.000
40000931	P	Chicken, meat-babyfood	0.005100	1.000	1.000
40000940	P	Chicken, liver	0.005600	1.000	1.000
40000950	P	Chicken, meat byproducts	0.003600	1.000	1.000
40000951	P	Chicken, meat byproducts-babyfoo	0.003600	1.000	1.000
40000960	P	Chicken, fat	0.003800	1.000	1.000
40000961	P	Chicken, fat-babyfood	0.003800	1.000	1.000
40000970	P	Chicken, skin	0.003800	1.000	1.000
40000971	P	Chicken, skin-babyfood	0.003800	1.000	1.000
06030980	6C	Chickpea, seed	0.002100	1.000	1.000
06030981	6C	Chickpea, seed-babyfood	0.002100	1.000	1.000
06030990	6C	Chickpea, flour	0.002100	1.000	1.000
01011000	1AB	Chicory, roots	0.002100	1.000	1.000
02001010	2	Chicory, tops	0.002100	1.000	1.000
09021020	9B	Chinese waxgourd	0.010000	1.000	1.000
04011040	4A	Chrysanthemum, garland	0.645800	1.000	1.000
10001060	10	Citrus citron	0.043600	1.000	1.000
10001070	10	Citrus hybrids	0.043600	1.000	1.000
10001080	10	Citrus, oil	0.043600	1.000	1.000
95001150	O	Coffee, roasted bean	0.000500	1.000	1.000
95001160	O	Coffee, instant	0.000500	1.000	1.000
05021170	5B	Collards	0.002100	1.000	1.000
19011180	19A	Coriander, leaves	0.645800	1.000	1.000
19011181	19A	Coriander, leaves-babyfood	0.645800	1.000	1.000
15001200	15	Corn, field, flour	0.003200	1.000	1.000
15001201	15	Corn, field, flour-babyfood	0.003200	1.000	1.000
15001210	15	Corn, field, meal	0.003200	1.000	1.000
15001211	15	Corn, field, meal-babyfood	0.003200	1.000	1.000
15001220	15	Corn, field, bran	0.003200	1.000	1.000
15001230	15	Corn, field, starch	0.003200	1.000	1.000
15001231	15	Corn, field, starch-babyfood	0.003200	1.000	1.000
15001240	15	Corn, field, syrup	0.003200	1.500	1.000

15001241	15	Corn, field, syrup-babyfood	0.003200	1.500	1.000
15001250	15	Corn, field, oil	0.003200	1.000	1.000
15001251	15	Corn, field, oil-babyfood	0.003200	1.000	1.000
15001260	15	Corn, pop	0.003100	1.000	1.000
15001270	15	Corn, sweet	0.003100	1.000	1.000
15001271	15	Corn, sweet-babyfood	0.003100	1.000	1.000
95001280	O	Cottonseed, oil	0.030000	1.000	1.000
95001281	O	Cottonseed, oil-babyfood	0.030000	1.000	1.000
11001290	11	Crabapple	0.028000	1.000	1.000
95001300	O	Cranberry	0.026600	1.000	1.000
95001301	O	Cranberry-babyfood	0.026600	1.000	1.000
95001310	O	Cranberry, dried	0.026600	4.000	1.000
95001320	O	Cranberry, juice	0.026600	1.100	1.000
95001321	O	Cranberry, juice-babyfood	0.026600	1.100	1.000
04011330	4A	Cress, garden	0.645800	1.000	1.000
04011340	4A	Cress, upland	0.645800	1.000	1.000
09021350	9B	Cucumber	0.010000	1.000	1.000
13021360	13B	Currant	0.132800	1.000	1.000
13021370	13B	Currant, dried	0.132800	1.000	1.000
04011380	4A	Dandelion, leaves	0.645800	1.000	1.000
01031390	1CD	Dasheen, corm	0.001400	1.000	1.000
02001400	2	Dasheen, leaves	0.002100	1.000	1.000
13011420	13A	Dewberry	0.130500	1.000	1.000
70001450	P	Egg, whole	0.005600	1.000	1.000
70001451	P	Egg, whole-babyfood	0.005600	1.000	1.000
70001460	P	Egg, white	0.005600	1.000	1.000
70001461	P	Egg, white (solids)-babyfood	0.005600	1.000	1.000
70001470	P	Egg, yolk	0.005600	1.000	1.000
70001471	P	Egg, yolk-babyfood	0.005600	1.000	1.000
08001480	8	Eggplant	0.160900	1.000	1.000
13021490	13B	Elderberry	0.050500	1.000	1.000
04011500	4A	Endive	0.645800	1.000	1.000
04021520	4B	Fennel, Florence	0.127200	1.000	1.000
14001550	14	Filbert	0.003900	1.000	1.000
14001560	14	Filbert, oil	0.003900	1.000	1.000
03001640	3	Garlic	0.010400	1.000	1.000
03001650	3	Garlic, dried	0.010400	1.000	1.000
03001651	3	Garlic, dried-babyfood	0.010400	1.000	1.000
01031660	1CD	Ginger	0.001400	1.000	1.000
01031661	1CD	Ginger-babyfood	0.001400	1.000	1.000
01031670	1CD	Ginger, dried	0.001400	1.000	1.000
01011680	1AB	Ginseng, dried	0.002100	1.000	1.000
23001690	M	Goat, meat	0.025400	1.000	1.000
23001700	M	Goat, meat byproducts	0.025300	1.000	1.000
23001710	M	Goat, fat	0.032300	1.000	1.000
23001720	M	Goat, kidney	0.031600	1.000	1.000
23001730	M	Goat, liver	0.223600	1.000	1.000
13021740	13B	Gooseberry	0.143500	1.000	1.000
95001750	O	Grape	0.033700	1.000	1.000
95001760	O	Grape, juice	0.033700	1.200	1.000
95001761	O	Grape, juice-babyfood	0.033700	1.200	1.000
95001770	O	Grape, leaves	0.033700	1.000	1.000
95001780	O	Grape, raisin	0.349200	1.000	1.000
95001790	O	Grape, wine and sherry	0.033700	1.200	1.000
10001800	10	Grapefruit	0.043600	1.000	1.000
10001810	10	Grapefruit, juice	0.043600	2.100	1.000
06031820	6C	Guar, seed	0.013700	1.000	1.000
06031821	6C	Guar, seed-babyfood	0.013700	1.000	1.000
14001850	14	Hickory nut	0.003900	1.000	1.000
09011870	9A	Honeydew melon	0.010000	1.000	1.000
95001880	O	Hop	1.213600	1.000	1.000
24001890	M	Horse, meat	0.025400	1.000	1.000
01011900	1AB	Horseradish	0.002100	1.000	1.000
13021910	13B	Huckleberry	0.032100	1.000	1.000
05021940	5B	Kale	0.002100	1.000	1.000
05011960	5A	Kohlrabi	0.002100	1.000	1.000
10001970	10	Kumquat	0.043600	1.000	1.000
03001980	3	Leek	0.010400	1.000	1.000
10001990	10	Lemon	0.043600	1.000	1.000
10002000	10	Lemon, juice	0.043600	2.000	1.000
10002001	10	Lemon, juice-babyfood	0.043600	2.000	1.000
10002010	10	Lemon, peel	0.043600	1.000	1.000
06032030	6C	Lentil, seed	0.013700	1.000	1.000
04012040	4A	Lettuce, head	0.645800	1.000	1.000
04012050	4A	Lettuce, leaf	0.645800	1.000	1.000
10002060	10	Lime	0.043600	1.000	1.000
10002070	10	Lime, juice	0.043600	2.000	1.000
10002071	10	Lime, juice-babyfood	0.043600	2.000	1.000
13012080	13A	Loganberry	0.130500	1.000	1.000
11002100	11	Loquat	0.028000	1.000	1.000

95002110 O	Lychee	0.085500	1.000	1.000
95002120 O	Lychee, dried	0.085500	1.850	1.000
14002130 14	Macadamia nut	0.003900	1.000	1.000
95002150 O	Mango	0.113300	1.000	1.000
95002151 O	Mango-babyfood	0.113300	1.000	1.000
95002160 O	Mango, dried	0.113300	1.000	1.000
95002170 O	Mango, juice	0.113300	1.000	1.000
95002171 O	Mango, juice-babyfood	0.113300	1.000	1.000
28002210 M	Meat, game	0.025400	1.000	1.000
27002220 D	Milk, fat	0.005200	1.000	1.000
27002221 D	Milk, fat - baby food/infant for	0.005200	1.000	1.000
27012230 D	Milk, nonfat solids	0.005200	1.000	1.000
27012231 D	Milk, nonfat solids-baby food/in	0.005200	1.000	1.000
27022240 D	Milk, water	0.005200	1.000	1.000
27022241 D	Milk, water-babyfood/infant form	0.005200	1.000	1.000
27032251 D	Milk, sugar (lactose)-baby food/	0.005200	1.000	1.000
15002260 15	Millet, grain	0.003700	1.000	1.000
05022290 5B	Mustard greens	0.002100	1.000	1.000
12002300 12	Nectarine	0.085800	1.000	1.000
15002310 15	Oat, bran	0.004200	1.000	1.000
15002320 15	Oat, flour	0.004200	1.000	1.000
15002321 15	Oat, flour-babyfood	0.004200	1.000	1.000
15002330 15	Oat, groats/rolled oats	0.004200	1.000	1.000
15002331 15	Oat, groats/rolled oats-babyfood	0.004200	1.000	1.000
08002340 8	Okra	0.172000	1.000	1.000
03002370 3	Onion, dry bulb	0.010400	1.000	1.000
03002371 3	Onion, dry bulb-babyfood	0.010400	1.000	1.000
03002380 3	Onion, dry bulb, dried	0.010400	1.000	1.000
03002381 3	Onion, dry bulb, dried-babyfood	0.010400	1.000	1.000
03002390 3	Onion, green	0.335000	1.000	1.000
10002400 10	Orange	0.043600	1.000	1.000
10002410 10	Orange, juice	0.043600	1.800	1.000
10002411 10	Orange, juice-babyfood	0.043600	1.800	1.000
10002420 10	Orange, peel	0.043600	1.000	1.000
95002450 O	Papaya	0.116300	1.000	1.000
95002451 O	Papaya-babyfood	0.116300	1.000	1.000
95002460 O	Papaya, dried	0.116300	1.000	1.000
95002470 O	Papaya, juice	0.116300	1.000	1.000
04012480 4A	Parsley, leaves	0.645800	1.000	1.000
01012500 1AB	Parsley, turnip rooted	0.002100	1.000	1.000
01012510 1AB	Parsnip	0.002100	1.000	1.000
01012511 1AB	Parsnip-babyfood	0.002100	1.000	1.000
06022550 6B	Pea, succulent	0.002100	1.000	1.000
06022551 6B	Pea, succulent-babyfood	0.002100	1.000	1.000
06032560 6C	Pea, dry	0.002100	1.000	1.000
06032561 6C	Pea, dry-babyfood	0.002100	1.000	1.000
06012570 6A	Pea, edible podded, succulent	0.029100	1.000	1.000
06032580 6C	Pea, pigeon, seed	0.013700	1.000	1.000
06022590 6B	Pea, pigeon, succulent	0.029100	1.000	1.000
12002600 12	Peach	0.085800	1.000	1.000
12002601 12	Peach-babyfood	0.085800	1.000	1.000
12002610 12	Peach, dried	0.085800	7.000	1.000
12002611 12	Peach, dried-babyfood	0.085800	7.000	1.000
12002620 12	Peach, juice	0.085800	1.000	1.000
12002621 12	Peach, juice-babyfood	0.085800	1.000	1.000
95002630 O	Peanut	0.005300	1.000	1.000
95002640 O	Peanut, butter	0.026600	1.000	1.000
95002650 O	Peanut, oil	0.026600	1.000	1.000
11002660 11	Pear	0.028000	1.000	1.000
11002661 11	Pear-babyfood	0.028000	1.000	1.000
11002670 11	Pear, dried	0.028000	6.250	1.000
11002680 11	Pear, juice	0.028000	1.000	1.000
11002681 11	Pear, juice-babyfood	0.028000	1.000	1.000
14002690 14	Pecan	0.021800	1.000	1.000
08002700 8	Pepper, bell	0.160900	1.000	1.000
08002701 8	Pepper, bell-babyfood	0.160900	1.000	1.000
08002710 8	Pepper, bell, dried	0.160900	1.000	1.000
08002711 8	Pepper, bell, dried-babyfood	0.160900	1.000	1.000
08002720 8	Pepper, nonbell	0.160900	1.000	1.000
08002721 8	Pepper, nonbell-babyfood	0.160900	1.000	1.000
08002730 8	Pepper, nonbell, dried	0.160900	1.000	1.000
95002750 O	Peppermint	0.215300	1.000	1.000
95002760 O	Peppermint, oil	0.215300	1.000	1.000
95002790 O	Pineapple	0.150700	1.000	1.000
95002791 O	Pineapple-babyfood	0.150700	1.000	1.000
95002800 O	Pineapple, dried	0.150700	5.000	1.000
95002810 O	Pineapple, juice	0.150700	1.700	1.000
95002811 O	Pineapple, juice-babyfood	0.150700	1.700	1.000
14002820 14	Pistachio	0.003900	1.000	1.000
95002830 O	Plantain	0.023800	1.000	1.000

95002840 O	Plantain, dried	0.023800	3.900	1.000
12002850 12	Plum	0.085800	1.000	1.000
12002851 12	Plum-babyfood	0.085800	1.000	1.000
12002860 12	Plum, prune, fresh	0.193500	1.000	1.000
12002861 12	Plum, prune, fresh-babyfood	0.193500	1.000	1.000
12002870 12	Plum, prune, dried	0.193500	5.000	1.000
12002871 12	Plum, prune, dried-babyfood	0.193500	5.000	1.000
12002880 12	Plum, prune, juice	0.193500	1.400	1.000
12002881 12	Plum, prune, juice-babyfood	0.193500	1.400	1.000
25002900 M	Pork, meat	0.025400	1.000	1.000
25002901 M	Pork, meat-babyfood	0.025400	1.000	1.000
25002910 M	Pork, skin	0.032300	1.000	1.000
25002920 M	Pork, meat byproducts	0.025300	1.000	1.000
25002921 M	Pork, meat byproducts-babyfood	0.025300	1.000	1.000
25002930 M	Pork, fat	0.032300	1.000	1.000
25002931 M	Pork, fat-babyfood	0.032300	1.000	1.000
25002940 M	Pork, kidney	0.031600	1.000	1.000
25002950 M	Pork, liver	0.223600	1.000	1.000
01032960 1C	Potato, chips	0.001400	1.000	1.000
01032970 1C	Potato, dry (granules/ flakes)	0.001400	6.500	1.000
01032971 1C	Potato, dry (granules/ flakes) -b	0.001400	6.500	1.000
01032980 1C	Potato, flour	0.001400	1.000	1.000
01032981 1C	Potato, flour-babyfood	0.001400	1.000	1.000
01032990 1C	Potato, tuber, w/peel	0.001400	1.000	1.000
01032991 1C	Potato, tuber, w/peel-babyfood	0.001400	1.000	1.000
01033000 1C	Potato, tuber, w/o peel	0.001400	1.000	1.000
01033001 1C	Potato, tuber, w/o peel-babyfood	0.001400	1.000	1.000
60003010 P	Poultry, other, meat	0.005100	1.000	1.000
60003020 P	Poultry, other, liver	0.005600	1.000	1.000
60003030 P	Poultry, other, meat byproducts	0.003600	1.000	1.000
60003040 P	Poultry, other, fat	0.003800	1.000	1.000
60003050 P	Poultry, other, skin	0.003800	1.000	1.000
10003070 10	Pummelo	0.043600	1.000	1.000
09023080 9B	Pumpkin	0.010000	1.000	1.000
09023090 9B	Pumpkin, seed	0.010000	1.000	1.000
11003100 11	Quince	0.028000	1.000	1.000
29003120 M	Rabbit, meat	0.025400	1.000	1.000
04013130 4A	Radicchio	0.645800	1.000	1.000
01013140 1AB	Radish, roots	0.002100	1.000	1.000
02003150 2	Radish, tops	0.002100	1.000	1.000
01013160 1AB	Radish, Oriental, roots	0.002100	1.000	1.000
02003170 2	Radish, Oriental, tops	0.002100	1.000	1.000
05023180 5B	Rape greens	0.002100	1.000	1.000
20003190 20	Rapeseed, oil	0.008200	1.000	1.000
20003191 20	Rapeseed, oil-babyfood	0.008200	1.000	1.000
13013200 13A	Raspberry	0.130500	1.000	1.000
13013201 13A	Raspberry-babyfood	0.130500	1.000	1.000
13013210 13A	Raspberry, juice	0.130500	1.000	1.000
13013211 13A	Raspberry, juice-babyfood	0.130500	1.000	1.000
04023220 4B	Rhubarb	0.127200	1.000	1.000
15003230 15	Rice, white	0.093200	1.000	1.000
15003231 15	Rice, white-babyfood	0.093200	1.000	1.000
15003240 15	Rice, brown	0.093200	1.000	1.000
15003241 15	Rice, brown-babyfood	0.093200	1.000	1.000
15003250 15	Rice, flour	0.093200	1.000	1.000
15003251 15	Rice, flour-babyfood	0.093200	1.000	1.000
15003260 15	Rice, bran	0.093200	1.000	1.000
15003261 15	Rice, bran-babyfood	0.093200	1.000	1.000
01013270 1AB	Rutabaga	0.002100	1.000	1.000
15003280 15	Rye, grain	0.040000	1.000	1.000
15003290 15	Rye, flour	0.040000	1.000	1.000
01013310 1AB	Salsify, roots	0.002100	1.000	1.000
02003320 2	Salsify, tops	0.002100	1.000	1.000
95003330 O	Sapote, Mamey	0.215300	1.000	1.000
03003380 3	Shallot	0.010400	1.000	1.000
26003390 M	Sheep, meat	0.025400	1.000	1.000
26003391 M	Sheep, meat-babyfood	0.025400	1.000	1.000
26003400 M	Sheep, meat byproducts	0.025300	1.000	1.000
26003410 M	Sheep, fat	0.032300	1.000	1.000
26003411 M	Sheep, fat-babyfood	0.032300	1.000	1.000
26003420 M	Sheep, kidney	0.031600	1.000	1.000
26003430 M	Sheep, liver	0.223600	1.000	1.000
15003440 15	Sorghum, grain	0.005600	1.000	1.000
15003450 15	Sorghum, syrup	0.005600	1.000	1.000
06003470 6	Soybean, seed	0.013600	1.000	1.000
06003480 6	Soybean, flour	0.013600	1.000	1.000
06003481 6	Soybean, flour-babyfood	0.013600	1.000	1.000
06003490 6	Soybean, soy milk	0.013600	1.000	1.000
06003491 6	Soybean, soy milk-babyfood or in	0.013600	1.000	1.000
06003500 6	Soybean, oil	0.036100	1.000	1.000

06003501 6	Soybean, oil-babyfood	0.036100	1.000	1.000
95003520 O	Spearmint	0.215300	1.000	1.000
95003530 O	Spearmint, oil	0.215300	1.000	1.000
09023560 9B	Squash, summer	0.010000	1.000	1.000
09023561 9B	Squash, summer-babyfood	0.010000	1.000	1.000
09023570 9B	Squash, winter	0.010000	1.000	1.000
09023571 9B	Squash, winter-babyfood	0.010000	1.000	1.000
95003590 O	Strawberry	0.031500	1.000	1.000
95003591 O	Strawberry-babyfood	0.031500	1.000	1.000
95003600 O	Strawberry, juice	0.031500	1.000	1.000
95003601 O	Strawberry, juice-babyfood	0.031500	1.000	1.000
20003640 20	Sunflower, seed	0.002800	1.000	1.000
20003650 20	Sunflower, oil	0.002800	1.000	1.000
20003651 20	Sunflower, oil-babyfood	0.002800	1.000	1.000
01033660 1CD	Sweet potato	0.001400	1.000	1.000
01033661 1CD	Sweet potato-babyfood	0.001400	1.000	1.000
04023670 4B	Swiss chard	0.127200	1.000	1.000
10003690 10	Tangerine	0.043600	1.000	1.000
10003700 10	Tangerine, juice	0.043600	2.300	1.000
01033710 1CD	Tanier, corm	0.001400	1.000	1.000
08003740 8	Tomatillo	0.160900	1.000	1.000
08003750 8	Tomato	0.015700	1.000	1.000
08003751 8	Tomato-babyfood	0.015700	1.000	1.000
08003760 8	Tomato, paste	0.053200	5.400	1.000
08003761 8	Tomato, paste-babyfood	0.053200	5.400	1.000
08003770 8	Tomato, puree	0.035300	3.300	1.000
08003771 8	Tomato, puree-babyfood	0.035300	3.300	1.000
08003780 8	Tomato, dried	0.015700	14.300	1.000
08003781 8	Tomato, dried-babyfood	0.015700	14.300	1.000
08003790 8	Tomato, juice	0.015700	1.500	1.000
15003810 15	Triticale, flour	0.003700	1.000	1.000
15003811 15	Triticale, flour-babyfood	0.003700	1.000	1.000
50003820 P	Turkey, meat	0.005100	1.000	1.000
50003821 P	Turkey, meat-babyfood	0.005100	1.000	1.000
50003830 P	Turkey, liver	0.005600	1.000	1.000
50003831 P	Turkey, liver-babyfood	0.005600	1.000	1.000
50003840 P	Turkey, meat byproducts	0.003600	1.000	1.000
50003841 P	Turkey, meat byproducts-babyfood	0.003600	1.000	1.000
50003850 P	Turkey, fat	0.003800	1.000	1.000
50003851 P	Turkey, fat-babyfood	0.003800	1.000	1.000
50003860 P	Turkey, skin	0.003800	1.000	1.000
50003861 P	Turkey, skin-babyfood	0.003800	1.000	1.000
01033870 1CD	Turmeric	0.001400	1.000	1.000
01013880 1AB	Turnip, roots	0.022800	1.000	1.000
05023890 5B	Turnip, greens	0.363800	1.000	1.000
14003910 14	Walnut	0.003900	1.000	1.000
86010000 O	Water, direct, all sources	0.011000	1.000	1.000
86020000 O	Water, indirect, all sources	0.011000	1.000	1.000
09013990 9A	Watermelon	0.010000	1.000	1.000
09014000 9A	Watermelon, juice	0.010000	1.000	1.000
15004010 15	Wheat, grain	0.003700	1.000	1.000
15004011 15	Wheat, grain-babyfood	0.003700	1.000	1.000
15004020 15	Wheat, flour	0.003700	1.000	1.000
15004021 15	Wheat, flour-babyfood	0.003700	1.000	1.000
15004030 15	Wheat, germ	0.003700	1.000	1.000
15004040 15	Wheat, bran	0.003700	1.000	1.000
15004050 15	Wild rice	0.013700	1.000	1.000
01034060 1CD	Yam, true	0.001400	1.000	1.000
01034070 1CD	Yam bean	0.001400	1.000	1.000